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Campbell, Jim; Gillespie, Morag

*Published in:*  
Local Economy

*DOI:*  
[10.1177/0269094217721669](https://doi.org/10.1177/0269094217721669)

*Publication date:*  
2017

*Document Version*  
Author accepted manuscript

[Link to publication in ResearchOnline](#)

*Citation for published version (Harvard):*  
Campbell, J & Gillespie, M 2017, 'Gender analysis of spending on the Scottish Modern Apprenticeship programme', *Local Economy*, vol. 32, no. 5, pp. 420-432. <https://doi.org/10.1177/0269094217721669>

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## **Gender analysis of spending on the Scottish Modern Apprenticeship programme**

**Dr Jim Campbell**

Reader, School for Business and Society, Glasgow Caledonian University, Glasgow,  
UK

**Morag Gillespie**

Research Associate, Women in Scotland's Economy Research Centre, Glasgow  
Caledonian University, Glasgow, UK

### **Corresponding Author:**

Jim Campbell

Address

Email: [J.Campbell@gcu.ac.uk](mailto:J.Campbell@gcu.ac.uk)

Occupational gender segregation remains an enduring challenge everywhere and a key contributor to the gender pay gap. Gender Impact Analysis tools are an important aid for evaluating the impact of social and economic policies from a gender perspective. In particular, gender budget analysis can help to show the impact of public spending and the extent to which it can reinforce or break down persistent gender inequalities.

A key component of the Scottish Government's employability strand of its Economic Strategy has been additional investment in the Modern Apprenticeship (MA) Programme.

As part of an ESRC-funded project, the authors undertook an assessment of the MA programme in Scotland using Gender Disaggregated Public Expenditure Incidence Analysis. This is a gender budget analysis tool that shows the gender responsiveness of budgets and specific policies by assessing the distribution of expenditure on men and women. Analysis of the investment in different occupational frameworks and at different levels of training found that, despite an increase in women's participation in MAs, significant occupation gender segregation persists. Men predominate in the higher level training programmes and women in the lower level apprenticeships, resulting in a substantial gender gap in public investment in the MA Programme.

This kind of approach to gender analysis has the potential to be an important tool for policy makers and practitioners to improve understanding of the implications of spending decisions and priorities and to contribute to developing strategies to tackle them in relation to gender, but also other protected characteristics such as disability, ethnic origin and age.

### **Key Words**

Gender budgeting, public spending, occupational gender segregation, Scotland, training

## **Gender analysis of spending on the Scottish Modern Apprenticeship Programme**

### **Introduction**

Resource allocation processes are built upon the assumption of rational, self-interested economic actors with little or no reference to gender. However the evidence suggests that men and women often have different policy experiences across a broad range of areas including healthcare, transport and criminal justice (Breitenbach and Wasoff, 2007). Similarly, gender is a key variable in determining individual and collective patterns of participation, for example with respect to economic activities such as paid and unpaid work, academic and vocational education and training or caring.

The way in which governments set policy objectives, priorities and budgets is often blind to gender differences (Elson, 1995), failing to recognise and account for the different situations and needs of women and men. As a result, resources can be allocated inefficiently and, in some instances, may actually serve to reinforce existing patterns of gender inequality, even when there is an explicit commitment to promote gender equality.

Gender Impact Analysis (GIA) is an important aid for evaluating the impact of social and economic policies from a gender perspective. In relation to public finance, gender responsive budgeting (GRB) initiatives have been developed over more than two decades as a means of advancing gender equality (Addabbo et al., 2015). GRB is “an analysis of the impact of the budget on gender equality and a process of changing budgetary decision-making and priorities.” (Sharp and Broomhill, 2013:1). Initiatives have been developed at different levels of government, using a range of methods and

approaches to reflect local conditions. GRB aims to help improve the quality of decision making in budget processes and build greater awareness, transparency and accountability (Elson & Sharp, 2010). GRB advocates have argued that a gendered analysis of public expenditure offers an opportunity to evaluate the impact of social and economic policies from a gender perspective and to support actions to tackle or eliminate policy effects that may serve to replicate or exacerbate persistent gender inequalities.

There are a range of tools that can be used to evaluate the gender impact of public spending programmes, but perhaps one of the best known is gender-disaggregated public expenditure incidence analysis (GDPEIA) (Budlender et al., 1998). Expenditure incidence analysis (EIA) provides a way to measure the distribution of public expenditure and tax policies for different social groups, including identifying which groups gain and which lose. A gender disaggregated EIA shows the gender responsiveness of budgets and specific policies by assessing the impact of public expenditure on men and women. Austen et al. (2013) provide a comprehensive account of the development of GDPEIA and its usefulness in helping to deliver more gender aware policy outcomes. However they recognise that:

“Producing a gender disaggregated EIA is not enough to bring about gender responsive policy and budget changes.” (Austen et al., 2013: 5)

As with any data analysis tools, GDPEIA has limitations: it can help to identify gender gaps, but needs to be used in combination with other forms of GIA and with understanding and awareness of the processes and actors involved in budgetary

decision making (Austen et al., 2013). However it does provide a good starting point for understanding the gender impact of spending decisions.

This article explores the gender impact of public investment in the Modern Apprenticeship (MA) programme in Scotland using a GDPEIA. It is based upon research undertaken by the authors, as part of an ESRC funded knowledge exchange programme that involved the development of a toolkit for gender impact analysis of the MA programme. We begin with a brief explanation of the operation of the MA programme in Scotland followed by an analysis by gender of recent trends in terms of entry, participation and completion of MAs. The GDPEIA looked beyond headline figures to take account of the length and quality of training and indicates that public investment in this training programme benefits men more than women. The final section discusses the usefulness of this approach to analysis, particularly for the operation of the MA programme in the context of the Scottish Government's equality strategy.

### **Modern Apprenticeships in Scotland**

MAs are a publicly funded training programme in Scotland which gives individuals the opportunity to combine employment and training by following an industry designed framework. It was introduced in 1994 to address a perceived lack of intermediate skills in the labour market and is aimed primarily at 16-19 year olds, although it has been available to all ages since 2002 (those aged over 19 are known as Adult MAs). The MA programme is 'modern' in the sense that it has extended the concept of apprenticeship training into sectors of the economy not traditionally associated with 'on-the-job' training,

such as retail, hospitality and childcare. MAs are offered at different levels from Level 2 (lowest) to Level 5 (highest). Successful completion of the MA results in the award of an accredited work based qualification, most often a Scottish Vocational Qualification (SVQ) at the respective level (Audit Scotland, 2014). The vast majority of MAs are either Level 2 which is the equivalent of the Intermediate Apprenticeship in England or Level 3 the equivalent of the Advanced Apprenticeship in England (Sosenko and Netto, 2013: 11).

All MAs have employed status meaning that, if not in employment already, potential candidates must find a suitable vacancy with an apprenticeship attached. Education and training are devolved matters and a range of agencies are involved in the design and delivery of MAs in Scotland. However the Scottish Government and Skills Development Scotland (SDS) have ultimate responsibility for the operation and public funding of MAs. SDS was formed in 2008 as a non-departmental public body bringing together careers, skills, training and funding services, with a budget in 2013/14 of £201.8m. Their main objective is to contribute to Scotland's "sustainable economic growth by supporting people and businesses to develop and apply their skills." (Skills Development Scotland, 2013: 2)

#### *New starts and apprentices in training*

Overall participation in the MA programme can be measured in three different ways.

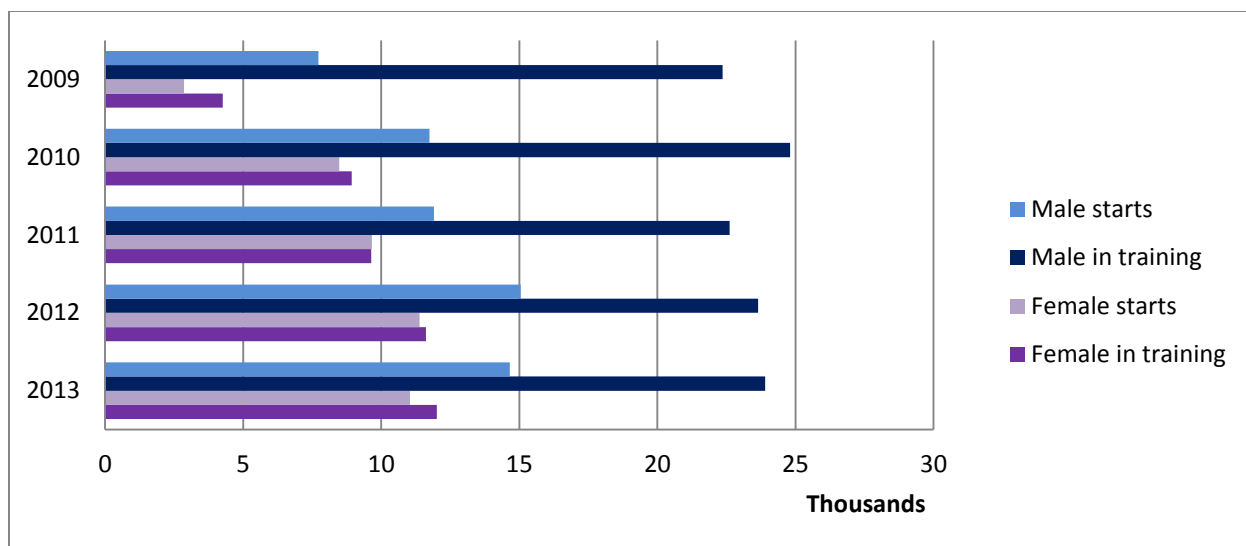
- New starts (the number entering the programme for the first time);
- The total number in training at a particular point in time; or
- The number completing training.

Historically there has been higher participation in MAs by men compared with women. However there has been a significant improvement in recent years in the number of women entering into apprenticeships. For example, in 2008/09 there was a total of 2,862 women who started an MA, representing 27% of the total new starts, but by 2012/13 the number had increased to 11,040, accounting for 43% of new starts (SDS, 2016).

Whilst this change is indicative of progress, a simple headcount of the number of women and men who enter the programme gives an incomplete picture of the gender impact of the public spending which is used to support the MA programme. The figures relating to the total number of apprentices in training at a given point reveal a different picture. Figure 1 shows that, although the number of women entering MAs has increased significantly over recent years, they still only represented about one third of the total in training in 2012/13. It is also worth noting that, while the graph shows a slight narrowing of the gap between starts and in-training numbers amongst men between 2009 and 2013, there is not a significant change in the gap for women.

**Figure 1. MA number of starts and in training by sex, 2009-13.**





Source: Skills Development Scotland, 2016.

The discrepancy between the number of starts and those in training is in part explained by differences between individual frameworks in the length of training. For example, a Level 2 construction MA lasts, on average, two years compared to one year for a Level 2 hairdressing MA; a Level 3 MA in childcare lasts 12 months whilst, in contrast, a Level 3 apprenticeship in plumbing take four years to complete (Skills Development Scotland, 2012).

Although there are variations, the length of apprenticeships is broadly linked to the level of the apprenticeship which is also an indication of the quality of the training. Table 1 shows that marginally more women (51.1%) than men started Level 2 apprenticeships in 2012-13 (5505 women compared with 5276 men) and marginally more were in training (5235 women compared with 5186 men). In response to demand for employers, the Level 2 MA was introduced in 2009 to replace the Skillseekers programme. Men are

much more likely to start at Level 3 or higher and 3 times more likely to be in training at Level 3 or above.

**Table 1.** Starts in training by level of training and sex, 2012-13.

	No. Of Starts			In Training		
	Women	Men	Total	Women	Men	Total
Level 2	5505	5276	10781	5235	5186	10421
Level 3	5402	8937	14339	6558	18316	24874
Level 4	126	370	496	208	352	560
Level 5	7	68	75	5	46	51
	11040	14651	25691	12006	23900	35906

Source: Skills Development Scotland, 2016.

In terms of the age profile of MAs, almost half of new starts in 2012/13 were between 16-19. In this age group, there is little difference between the sexes in terms of new starts, but there is a bigger difference in the numbers in training. In March 2013 there were more than twice as many male apprentices in training aged 16-19 compared to women while the differences are less marked in the 20-24 age range (SDS, 2016).

The recent trend shows that, although women have an increased share of the total new starts, there is still a big gap in the numbers in training. This can be explained by men being more likely to have multi-year apprenticeships, while women tend to be in training

for shorter periods. The main reason for this is the types of occupations and the level of MA which men and women enter into.

Previous research (Campbell et al., 2005, 2006 & 2009) has demonstrated how occupational gender segregation is an enduring feature of MAs and the labour market in general in Scotland and the UK. Table 2 provides a snapshot of the data for March 2013 of the 12 largest framework that account for three quarters of all apprenticeships. It shows that most frameworks reflect a high level of gender based occupational segregation. Four of the MA frameworks (construction, engineering, automotive and electrical) are almost exclusively male: these are all traditional craft apprenticeships. Three of the frameworks (health and social care, childcare and hairdressing) are female dominated and only three (hospitality, retail and management) are within 10% of gender balance.

The level of gender based occupational segregation in the largest frameworks has changed little over time: the traditional craft apprenticeships have become marginally less male dominated. For example, women accounted for 1.9% of engineer apprentices in 2008, rising to 2.8% in 2013; but female domination in health and social care has become even more entrenched since women accounted for 80.3% of the total in 2008, rising to 87.7% in 2013 (SDS, 2013).

**Table 2.** 12 largest MA frameworks, numbers in training in Scotland, March 2013, disaggregated by sex.

Frameworks	Total	Male	Female	
		No.	No.	%
Construction combined <sup>a</sup>	3857	3803	54	1.4%
Engineering	3671	3569	102	2.8%
Hospitality	3253	1562	1691	52.0%
Automotive combined <sup>a</sup>	2564	2525	39	1.5%
Health & Social Care	2123	262	1861	87.7%
Business & Administration	1989	523	1466	73.7%
Electrical combined <sup>a</sup>	1846	1823	23	1.2%
Hairdressing combined <sup>a</sup>	1818	123	1695	93.2%
Freight Logistics combined <sup>a</sup>	1663	1564	99	6.0%
Childcare combined <sup>a</sup>	1506	39	1467	97.4%
Retail	1413	571	842	59.6%
Management	1379	771	608	44.1%
Total of above frameworks	27082	17135	9947	36.7%

a. Where new frameworks are introduced, the transition period can include apprentices in both old and new frameworks – these are combined throughout this article for each of the sectors identified here .

Source: Authors' analysis based on data from SDS (2016).

## MA completions

The third way of analysing the trends in MAs is to look at completions. Overall, 77% of leavers in 2012-13 achieved an apprenticeship qualification, 76% of women and 77% of men. This means that almost a quarter of apprentices leave without achieving a qualification. However, this level of achievement represents an improvement compared with the period from 2008-11 when qualification levels were around 70% on average (SDS, 2016).

We have shown already that women form a slight majority of those in Level 2 apprenticeships. Comparison between the larger frameworks is also revealing when we look at achievements. Of the 12 largest frameworks, eight offered Level 2 MAs in 2013. Although women accounted for 51.1% of starts and 50.2% of those in training at Level 2, they accounted for 60% of all Level 2 achievers in 2012-13 (Table 3). Women's achievement rates were higher in most frameworks, but men's overall achievement rate was higher. This is explained in part by the fact that the two frameworks with the lowest achievement rates at Level 2, hairdressing and health and social care, are both female dominated.

At Level 3, women accounted for 38% of achievers overall, a proportion similar to female starts (39.3%) and leavers (37.2%) at this level (Table 3), but higher than the proportion of females in training at Level 3 (26.4%). The achievement rate amongst women at Level 3 is lowest in the male dominated frameworks of engineering and automotive industries, but overall a higher proportion of women achieved their apprenticeships at this level.

Relatively few people achieve apprenticeships at Levels 4 and 5, in 2013, but male and female achievement rates were similar. At Level 4, 417 achieved apprenticeships (84% of women and 87% of men) and 80 achieved a Level 5 (87% of women and 88% of men).

**Table 3.** Level 2 and Level 3 Achievement rates by sex, 2012-13.

	Level 2			Level 3		
	Female % of achievers	Achievement rates as % of leavers		Female % of achievers	Achievement rates as % of leavers	
		Female	Male		Female	Male
Automotive combined	0	-	58	1	57	65
Business & Administration	72	81	77	80	85	74
Childcare combined	-	-	-	98	74	57
Construction combined	1	100	80	2	74	74
Electrical combined	-	-	-	1	73	85
Engineering	-	-	-	2	55	75
Freight Logistics combined	11	85	89	3	75	86
Hairdressing	92	67	60	93	79	79

combined						
Health & Social Care	86	63	61	86	71	58
Hospitality	59	80	77	58	82	77
Management	-	-	-	49	83	79
Retail	61	77	73	64	67	61
Total	60	73	77	38	78	76

Source: Skills Development Scotland, 2016.

### **The gender impact of public spending on MAs**

As the number of both men and women entering MAs has increased, so too has the level of public support. Annual public spending on the MA programme increased from around £60m in 2008/9 to £75m in 2012/13 representing a 24% increase in real terms (Audit Scotland 2014: 7). About 25% of MA spending in 2012/13 was for new starts in the first year of training, the rest was for continuing apprentices who started training in previous years. The increase in spending reflects the Scottish Governments target to provide 25,000 new MA places each year between 2011/12 and 2015/16 (Audit Scotland, 2014: 5). However the actual spending in real terms per apprentice has gone down by 7.3%: in 2008/09 spending per apprentice in training was around £2,300 compared to £2,100 in 2012/13 (Audit Scotland, 2014: 18).

### *GDPEIA Analysis*

In order to assess the gender inclusiveness of public spending on MAs in Scotland, a GDPEIA was undertaken. Basically, a GDPEIA involves identifying a unit cost of a service or programme to identify the value of expenditure on the women and men involved, this can be expressed as male and female shares (Elson, 2002). As already identified, funding for apprenticeships varies considerably between Frameworks and according to age group and the level of training, so we aimed to conduct a more detailed analysis beyond identifying a single beneficiary or unit cost.

The analysis was based on unpublished data provided by SDS for 2012-13 and was applied only to the 12 largest frameworks already discussed. The funding attributable is assessed according to achievements rather than start, in-training or leaver numbers because this group of apprentices attracts full funding, including the final tranche that is payable only on successful completion. Due to the relatively small numbers undertaking Level 4 and 5 apprenticeships these have been excluded from the analysis.

Age is a significant factor for the level of funding for apprenticeships, a simple count of women and men was insufficient. The gender-disaggregated funding was estimated to take account of the fact that apprentice numbers for any given framework are not evenly spread between the age groups and the data were weighted to reflect the proportions in each of the three age groups.

The example of hospitality shows how the weighting was done. Funding for apprentices in that framework varies for each age group and for Level 2 or Level 3 apprenticeships. At Level 2 the funding across age groups is £3,050 for 16-19; £1,550 for 20-24; and £500 for 25 +. In 2012/13 a total of 2,521 people successfully completed Level 2



hospitality apprenticeships: they included 991 16-19 years olds, 752 20-24 years old and 778 aged 25+. An average funding rate for the 2,521 people who achieved their hospitality apprenticeship in 2012-13 was apportioned on the following basis:

- For age 16-19:  $991 / 2521$  at £3050 = £1199
- For age 20-24:  $752 / 2521$  at £1550 = £462
- For age 25+:  $778 / 2521$  at £500 = £154

This results in overall average funding per Level 2 apprenticeship of £1,816, whereas a crude average of the three funding rates, assuming the same proportions in each age group, would be £1,700. In the absence of more precise data, this approach is considered more sensitive to both the level of funding and age of trainees which can vary considerably between frameworks. These calculations were applied to each framework and level of apprenticeship to provide the estimates summarised below.

#### *GDPEIA analysis of 12 largest MA frameworks*

Within the 12 largest frameworks, there were eight frameworks that offered Level 2 apprenticeships. In these eight frameworks, there is considerable variation in the average funding rate, even at Level 2 (Table 4). However, funding reflects broadly the balance of achievers at this level (60% female). In 2012-13, overall, approximately £11m of public funding was attached to these Level 2 apprenticeships, of which 62% went to female apprentices and 38% to male apprentices.

**Table 4.** Level 2 Achievers in the 12 largest MA frameworks, 2012-13: estimated funding, disaggregated by sex.

	Achievers		Average rate £	Estimated funding £			
	Female	Male		Female	Male	All	Female %
Automotive combined	0	25	2,837	-	70,920	70,920	0%
Business & Administration	496	192	2,440	1,210,011	468,391	1,678,403	72%
Construction combined	2	388	2,451	4,903	951,144	956,046	1%
Freight Logistics combined	57	458	720	41,045	329,801	370,847	11%
Hairdressing combined	555	49	2,526	1,402,021	123,782	1,525,803	92%
Health & Social Care	736	117	1,569	1,154,716	183,562	1,338,278	86%
Hospitality	848	579	1,816	1,539,636	1,051,238	2,590,874	59%
Retail	722	454	2,058	1,485,932	934,367	2,420,299	61%
Totals	3416	2262		6,838,264	4,113,205	10,951,469	62%

Source: authors' calculations based on unpublished data provided by SDS

Table 5 provides estimates of funding for Level 3 achievers in the 12 largest frameworks in 2012-13. The figures shows that, although women accounted for 38% of achievers, they had only 34% of funding attached to their apprenticeships compared with 66% attached to male apprentices. This reflects the higher numbers of male achievers in

frameworks with large numbers of apprenticeships at higher funding rates, including engineering and construction.

**Table 5.** Level 3 achievers in the 12 largest frameworks, 2012-13: estimated funding disaggregated by sex.

	Achievers		Average rate £	Estimated funding £			
	Female	Male		Female	Male	All	Female %
Automotive combined	8	558	6931	55,452	3,867,761	3,923,213	1%
Business & Administration	677	174	4724	3,198,044	821,949	4,019,994	80%
Childcare combined	791	20	6068	4,799,407	121,350	4,920,757	98%
Construction combined	23	1311	5904	135,786	7,739,798	7,875,584	2%
Electrical combined	8	645	6440	51,522	4,153,978	4,205,500	1%
Engineering	23	901	8157	187,622	7,349,878	7,537,500	2%
Freight Logistics combined	21	793	1363	28,632	1,081,201	1,109,833	3%
Hairdressing	258	19	5917	1,526,476	112,415	1,638,890	93%

combined							
Health & Social Care	313	51	3249	1,016,881	165,690	1,182,571	86%
Hospitality	636	458	3759	2,390,487	1,721,451	4,111,939	58%
Management	392	409	1657	649,579	677,750	1,327,329	49%
Retail	143	80	4048	578,848	323,831	902,680	64%
Totals	3293	5419		14,618,736	28,137,054	42,755,790	34%

Source: authors calculations based on unpublished data provided by SDS.

Our analysis indicates that there were 14,390 achievers across the 12 largest frameworks in 2012-13 at Levels 2 and 3 who had estimated funding of around £53.7m attached to their apprenticeships (Table 6). While the achievements of and funding for women's apprenticeships are closely matched to men's at Level 2, the disparity between them increases significantly at Level 3. This disparity works in favour of male apprenticeships so that, although female apprentices accounted for 46.6% of achievers at Levels 2 & 3, they attracted only 40% of the total funding, approximately £21.5m compared to a public spend of £32.2m on male apprenticeships.

Table 6: Achievers in the 12 largest frameworks, 2012-13, estimated funding totals disaggregated by sex.

	Estimated funding				
	Female	Male	All	Female %	Female %

				funding	achievers
All level 2	£6,838,264	£4,113,205	£10,951,469	62.4%	60.2%
All level 3	£14,618,736	£28,137,054	£42,755,790	34.2%	37.8%
Total	£21,457, 000	£32,250,259	£53,707,259	40.0%	46.6%

### **Informing progress towards gender equality?**

The Scottish Government's Skills Strategy (2010) identified that progress was being made towards the desired goal of gender balance in MAs. The recent trends in MAs indicate that overall female participation has improved, particularly in relation to new starts. Women's share of new starts increased from 27% in 2008/9 to 43% in 2012/13. This is also reflected in an increase in the number of women in training which rose from 16% in 2009 to 33.4% in 2013. However there is still a significant gap between the percentage share of new starts and women's share of those in training. This gap can be explained by two factors: firstly, disparities in the length of apprenticeship training can vary between six months and four years; secondly, the types of apprenticeships which women tend to undertake are, on the whole, of shorter duration than those undertaken by men.

In the 12 largest frameworks there is still a significant level of occupational segregation with women concentrated in childcare, hairdressing and health & social care. These three frameworks accounted for 42% of all women in training in 2013. In contrast the construction, engineering and automotive frameworks accounted for 41% of all men in training in 2013. Male dominated frameworks tend to last longer than female dominated

frameworks. Women are concentrated in apprenticeships with lower qualification levels and shorter training that generally attract less funding.

The GDPEIA helps to expose the way in which headline figures can conceal gendered impacts. In the example of the MA programme, funding arrangements are complex and are compounded by occupational gender segregation of men and women into particular frameworks and sectors, combined with women's concentration in Level 2 apprenticeships. The result is a lower level of public spending on women compared to men in the MA programme. Apprenticeships at Level 3 and above accounted for 76% of total MA spending in 2012/13.

The effectiveness of SDS administration of the MA programme was the subject of an audit by Audit Scotland. In relation to gender equality, their report also acknowledges gender disparities in terms of the beneficiaries of public spending on the programme. They highlighted that women accounted for 43% of new starts in 2012/13 but benefited from only one third of the public funding (Audit Scotland 2014: 25). Men aged 16-19 are the largest group of apprentices, usually attached to apprenticeships with higher contribution rates: Audit Scotland cited the example of engineering in which 75% of people starting an apprenticeship, which attracts a public spending contribution rate of £9,000, were 16-19 year old men (Audit Scotland, 2014: 24).

Evidence from a programme of research over a decade on gender inequality and occupational segregation has helped to put occupational segregation more firmly on the policy agenda (Thomson, 2016), but progress has been very slow. Skills Development Scotland (SDS) has been very successful in recent years in meeting some of the targets

set by the Scottish Government, in particular increasing the number of young people entering apprenticeship training and who successfully complete that training. However they have had less success at addressing the gender imbalance which exists in many frameworks. Indeed, despite a commitment by both SDS and the Scottish government to tackle gender based occupational segregation (Scottish Government, 2014) the operation of the MA, particularly in terms of spending, continues to favour young men and disadvantage women.

In recommending what should be done to develop Scotland's young workforce, the Wood Commission included amongst its recommendations that SDS should develop an action plan, with 'realistic but stretching improvement targets' on gender inequalities in the MA programme (Scottish Government, 2014b: 38). The Scottish government recently set SDS a target to reduce to 60% the percentage of MA frameworks where the gender balance is 75:25 or worse by 2021 from its level in 2014/15 of 72% (Scottish Government, 2015: 39). Given the entrenched nature of occupational segregation, this can be viewed as an ambitious target and, if achieved, would go some way to reducing the disparities in public spending between women and men apprentices. In its Equality Action Plan published in 2015, SDS outlined a series of measures which they believe will help them to achieve the objective of significantly reducing gender segregation in the MA programme. (SDS, 2015). The measures include: early intervention in schools to challenge gender stereotypes; work with the Construction Industry Training Board (CiTB) to encourage more women into the industry; and greater support for young people entering apprenticeships where their sex is in the minority.

However, whilst the sincerity is not in doubt of either the Scottish government or SDS in terms of their desire to tackle and reduce gender based occupational segregation, and although target setting is a useful way to focus efforts, the targets themselves need to be clear and fit for purpose. Our research shows that headline 'new start' figures conceal the extent of gender disparities. It is not clear whether the target to reduce the number of frameworks where the gender balance is 75:25 or worse refers to new starts, numbers in training or completions. In addition, it could create an incentive for SDS to concentrate on those frameworks which are closer to 75:25 gender balance or, indeed, frameworks with few apprentices where small changes could make a bigger difference, in order to meet the target set by the Scottish government. The SDS Equality Strategy acknowledges that:

“the main cause of gender segregation is traditional, cultural norms and out-of-date value systems, including stereotypical views among key influencers (e.g. parents, teachers, peers) regarding young people’s choices in school subjects and jobs.” (SDS, 2015:11)

However, even at the point of publishing the action plan, SDS also acknowledges attaining the target “may not necessarily reflect the cultural shift required to address gender bias” and will develop “a range of indicators that demonstrate progress in addressing the strong gender bias in some MA frameworks.” (SDS, 2015:39) This reinforces concerns that the target may not be effective at addressing the underlying causes of gender segregation, even if it is achieved, casting doubt on the value of the target from the outset.



## Conclusions

As we have demonstrated, the extent of gender segregation in the MA programme does vary depending upon how participation is measured. The analysis in this article has highlighted the persistence of occupational segregation and the GDPEIA has shown how this results in significant gender disparities in public spending on apprenticeships.

Given the many and varied causes of segregation and in order to make significant progress on these issues in a more reasonable period of time, our research leads us to suggest that a National Strategy to address occupational gender segregation is required,. A National Strategy that includes planned and co-ordinated action by stakeholders in the education sector, as well as relevant policy actors and public and private sector employers would ensure that the issue is recognised as the responsibility of all involved. In addition, financial incentives for employers to take on atypical apprenticeships might be necessary in the short run to challenge entrenched gender stereotyping.

The promotion of gender equality has been a key policy goal of Scottish governments since the establishment of the devolved administrations in 1999. The approach adopted involved a wider focus on equality, including gender and other protected characteristics. A Public Sector Equality Duty (PSED) was introduced in April 2011, requiring:

“that public authorities give proper consideration to equality in their day to day work in shaping policy, delivering services and in their employment practices.”

(Equality and Human Rights Commission, 2015: 1)

The Scottish Government is also progressing integration of equality analysis into the Budget process and, since 2009, produces an Equality Budget Statement attached to the annual national Draft Budget in an effort “to expose the value of resources allocated for the advancement of equality and the process by which such decisions are made”. (O’Hagan and Gillespie, 2016: 51) Although O’Hagan and Gillespie (2016) argue that a systematic equality analysis of the Scottish Budget remains some way off the Scottish Government’s refreshed Economic Strategy (2015) presents tackling inequality and improving competitiveness as “mutually reinforcing objectives” (Scottish Government, 2015: 77). The strategy recognises the need to tackle skills and attainment gaps and gender based occupational segregation as key issues in the Scottish labour market.

The objective of the PSED is to eliminate policy effects that may serve to replicate persistent gender inequalities. The GDPEIA helped to reveal who gains and who loses from public spending decisions on MAs and demonstrates that the way in which the MA programme operates and the way training is funded does perpetuate gender inequality. Although the limits of gender disaggregated data analysis tools for bringing about change (Austen et al., 2015) do need be recognised, such tools can play an important role in making the impact of spending decisions more transparent and act in support of approaches that move beyond headline figures towards implementing more transformative change. In Scotland, where there is a commitment to improving the transparency of budgetary decision making in relation to equality, such tools will be equally important for understanding the extent of progress being made in areas such as MA training in what will need to be a long term approach. The potential should also be

explored for this kind of analysis to inform equal treatment strategies in relation to other protected characteristics such as disability, ethnic origin and age.

### **Funding Acknowledgement**

This work was supported by the Economic and Social Research Council (ES/Koo568/1).

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